

WI Environmental

The Clean Smokestack Solution

By
WI Environmental

Presented by WI Environmental China Representative
Paul Chung
Of
Unison Chemicals Limited

What Is the Problem?

- Climate change and the human health effects of producing services and products.
- CO₂ and heavy metals from:
 - 50,000 coal-fired power plants
 - 17,000 cement plants
 - Thousands of various types of CO₂ producing industries, including wood pulp plants
- Green house gas emissions
 - CO₂ production from electricity generation
 - United States - 2.8 billion tons/year
 - China is at 2.7 billion tons/year.
 - China expects to build 199 coal-fired facilities over the next 10 years.
 - Worldwide cement plants and wood pulp processing plants 1.1 billion tons

What Is the Problem? - US

- United States coal-fired powered power plants
 - 59% of sulfur dioxide (SO₂)
 - 18% of nitrous oxides air emissions
 - Largest source of toxic mercury,
 - 50% of particle emissions.
 - 40% of carbon dioxide emissions,
 - Largest single source of sulfur dioxide, 2/3 of the total SO₂

Overview

Cost Effective Removal of CO₂, SO_x, NO_x and Heavy Metals From Smokestack Emissions.

To Contribute to

- **The Climate Change Challenge**
- **Human Health and**
- **Efficient Energy Production**

The Company

WI Environmental – Washington State based environmental solutions company which provides worldwide patented and trademarked technologies for:

- Removal of Heavy Metals from air, soil, sludge and water

The Company (cont)

- Capture of CO₂ and removal of SO_x, NO_x and heavy metals from the smokestack emissions of facilities such as:
 - Coal-fired power plants
 - Cement plants
 - Wood pulp plants
 - Other high CO₂ producing industrial processes
- Removal of virtually all contaminants from the indoor air environment

The Clean Smokestack Solution

- Two worldwide patented, trademarked, tested and applied technologies:
 - Air System Technology (AST) Solution
 - XR-88™
- Used in combination to treat:
 - Coal or diesel-fired generation facilities
 - Many other smokestack or exhaust emitting devices

The Clean Smokestack Solution (cont)

- Removal of:
 - Carbon Dioxide (CO₂)
 - Heavy Metals
 - Small particles (ash not trapped by the electrostatic precipitators)
 - NO_x and SO_x contamination found in the emitted flue gases
- Products for reuse
 - Sludge for building materials – Flue Gas Desulphurized (FGD) gases
 - Nitrogen compounds for fertilizers

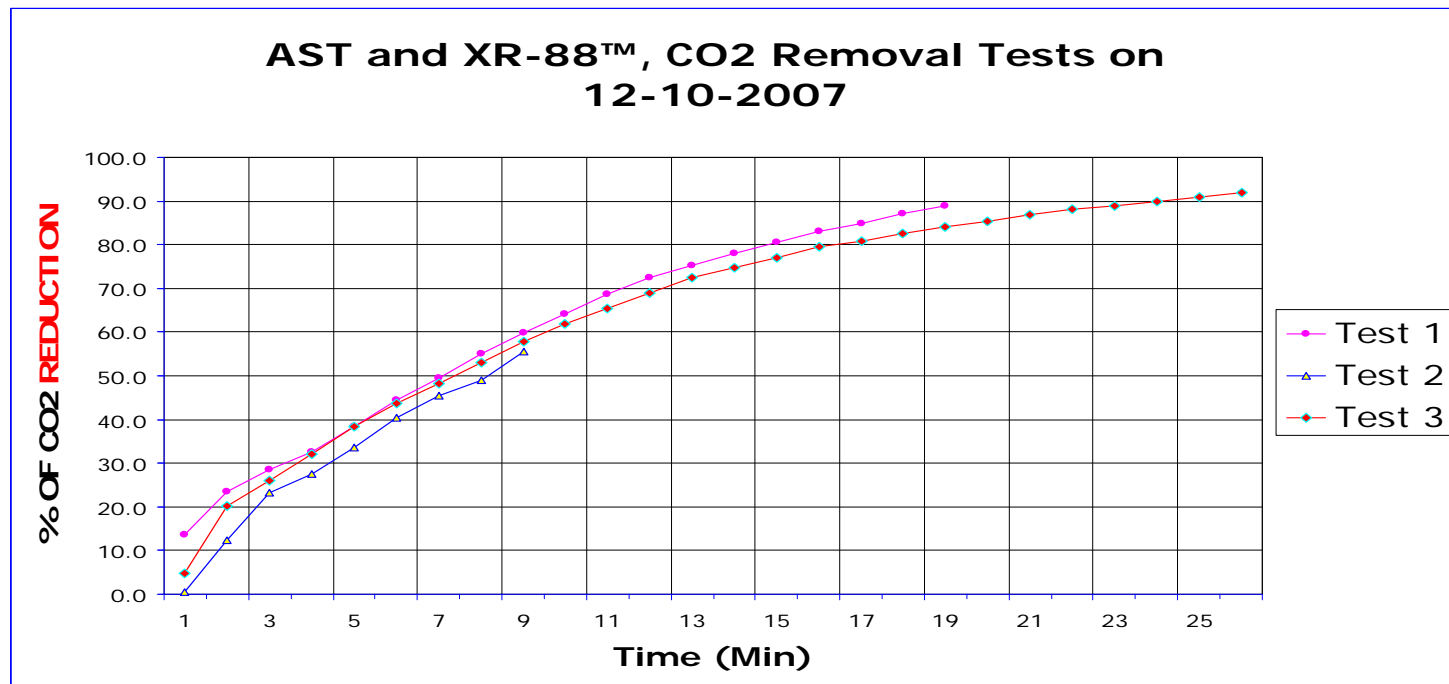
CO₂ Removal

- US EPA Certified Laboratory Engineering Evaluation Of:
 - Patented water wash technology for the air purification – The Air System Technology (AST) Solution and
 - XR-88™ slurry

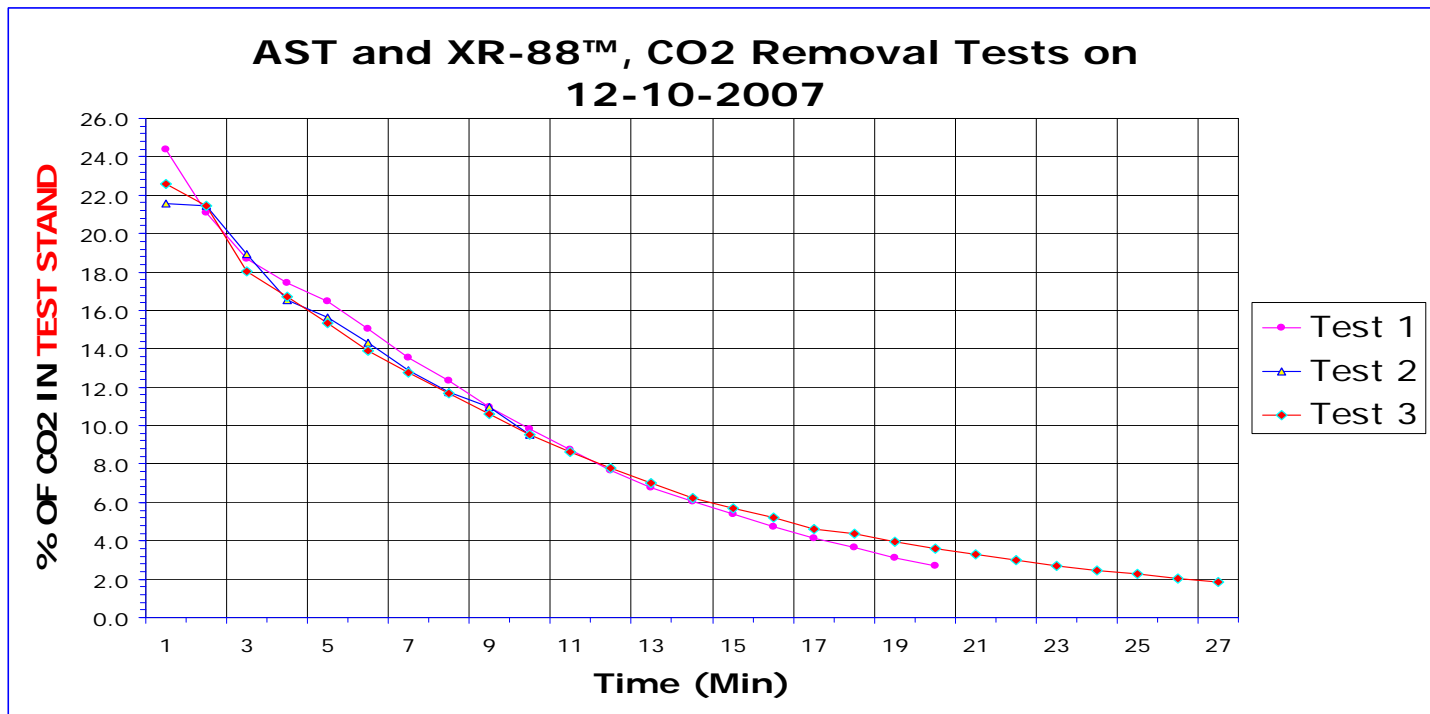
CO₂ Removal (cont)

- Results:
 - Removed CO₂ with an optimization of between 75 and 90% CO₂ removal
 - Carbon Sequestering - XR-88™ chemically reacted with the CO₂ to form a chalk-like material with a high silica content
 - Bound CO₂ will not dissolve in water or release CO₂ with time

CO₂ Removal (cont)



CO₂ Removal (cont)



Clean Smokestack Solution Technology Base

- Two component technologies
 - Air System Technology (AST) solution developed for indoor air quality
 - XR-88™ developed to stabilize and render benign a wide variety of heavy metals in:
 - Air
 - Water
 - Soil
 - Sludge
- Many applications
 - In combination
 - Single or multiple target substances or environments

The AST Solution Component

- Advanced air purification technology:
 - No solid filters
 - Patented aqueous filtering system with a combination, as needed,
 - Electrostatic filtering
 - UV sterilization
 - Germicidal sterilization
 - Does not recirculate contaminants

The AST Solution Component (cont)

- Capture and eliminate the following contaminants:

- Carbon Dioxide
- Smoke
- Mold and mildew
- Pollen and grasses
- Chemical vapors
- Oil mists
- Particulates
- Bacteria and viruses
- Pet dander
- Odors
- Other allergens

The XR-88™ Component

- Propriety product that stabilizes and renders benign a wide variety of metals such as:
 - uranium
 - copper
 - hexavalent chromium
 - nickel
 - zinc
 - lead,
 - arsenic

The XR-88™ Component (cont)

- Treats
 - Industrial waste
 - Acid mine drainage
 - Nuclear power plant radioactive waste waters
 - Heavy metals contaminants found in water, soil, and sludge

The XR-88™ Component (cont)

- Metal stabilization tested extensively in the United States and China.
 - Passed every test, including the US Environmental Protection TCLP
 - Yielded a non-hazardous waste.
 - Electroplating liquids showed no detectable levels of the metals

Who Are the Participants?

- Plant owners and operators
- Government regulatory and approval agencies
- Engineering, design and construction companies
- Equipment and material manufacturers
- Investors
- Financial institutions
- Governments or quasi-government organizations
- Multiple or full service providers
- Additionally environmental and health interest/advocacy groups

What Are the Opportunities?

- Purchase solution
- Investment
- Teaming
- Joint ventures
- Licensing

How Is It Done? The Process

- Statement of Interest which includes:
 - Identification of the company or organization
 - Brief description of what it does and where it does it and
 - Overview of the requirement or the type of desired participation and capabilities to participate
- WI Environmental will perform a preliminary applicability evaluation and respond:
 - With request for additional information,
 - Declination with explanation, or
 - Invitation to engage in participation discussions
- - Confidentiality and Non Disclosure agreement

How Is It Done? For Projects

- Upon mutual agreement to proceed on a specific project or group of projects,
 - Phase I - Feasibility, economic and preliminary engineering design analyses
 - Phase II - Full scale engineering and design
 - Phase III - Installation of the Clean Smokestack Solution
 - Phase IV - Initial operating capability and training
 - Phase V - Full operational capability and supply of XR-88™

How Is It Done? For Participation in Delivering Solutions to Customers

- Phase I
 - Development of respective roles and missions of the participants
 - Development of the terms and conditions of the relationship
- Phase II - Execution of appropriate agreements
- Phase III - Development and institution of processes and procedures to implement the agreements
- Phase IV - Operation

Contact Information

For more information, please contact:

In China
WI Environmental China Representative
Paul Chung
Unison Chemicals Limited
Room 3103, Block A
Yi He International Building
Hong Kong Middle Road
Shi Nan District, 266071
Qingdao, China

Tel. No. (86) 532-85039535
Fax No. (86) 532-85039537
PaulykChung@gmail.com

In Hong Kong
WI Environmental China Representative
Leroy Lam
Unison Chemicals Limited
Suite 908, 9th Floor
One Pacific Place
88 Queensway
Hong Kong

Tel. No. (852) 9168-3198
LeroyLam.hk@gmail.com

Other Locations
information@wandellindustries.com

001-866-456-18140

WI ENVIRONMENTAL
Providing Solutions for Clean Air...Water...Soil
Meeting the Challenge